

**SUMMARY OF THE
FIELD ACTIVITIES COMMITTEE MEETING
JUNE 27, 2000**

The Field Activities Committee of the National Environmental Laboratory Accreditation Conference (NELAC) met on Tuesday, June 27, 2000 at 9 a.m. Eastern Daylight Time (EDT) and at 1:30 p.m as part of the Sixth NELAC Annual Meeting held in Williamsburg, VA. The meeting was led by the committee chair, Mr. Daniel Bivins of the U.S. Environmental Protection Agency (EPA). A list of action items is given in Attachment A. A list of participants is given in Attachment B. *The purpose of the meeting was to further discuss and develop field activities standards.*

INTRODUCTION

Mr. Bivins opened the meeting and welcomed the committee and audience participants. Each committee member was introduced. Mr. Bivins then reviewed the agenda. He noted that the Air Source Emissions Task Team (ASETT) subcommittee of the Environmental Laboratory Advisory Board (ELAB) will make a presentation during the afternoon session. The facilitator for the meeting reviewed the ground rules and how the meeting would be structured so that everyone would have a chance to speak.

Mr. Bivins asked that anyone interested in becoming a contributor member of the Field Activities Committee send a nomination form to the appropriate person noted on the NELAC Website as there will be one or two openings in the next year. Nominations will be passed on to the NELAC Board of Directors (BoD) for consideration and possible appointment to the committee. Mr. Bivins would especially like to have one committee representation from the air emissions testing community.

BACKGROUND, HISTORY, AND PURPOSE OF FIELD ACTIVITIES COMMITTEE

Dr. Barton Simmons gave a capsule report on the background and history of the *ad hoc* Field Measurements Committee and the Field Activities Committee. The committee recognized that the trend is for more and more measurements and analyses to take place in the field rather than in the conventional laboratory. Development of standards began soon after the committee became a standing committee. The scope of the standards was first debated and the timing for introduction of field standards was also considered. A Field Activities subcommittee on measurement of source emissions was formed to focus on standards for the measurement of source emissions and Mr. Bivins is the chair of that subcommittee.

GENERAL SAMPLING STANDARD

Dr. Simmons introduced the topic. The general sampling standard is intended to apply to any media of any program and is intended to cover any pure sampling done for compliance testing. The section on

measurement of source emissions in the standard will be discussed in the afternoon session. Feedback from the audience is sought on what the standard should be.

Survey to Prioritize Contents of Field Sampling Standard

A participant asked if the survey taken several years ago to prioritize contents of the field sampling standard would be revisited and is there still a consensus that stack sampling is the first priority? Dr. Simmons said the prior survey's results could be placed on the NELAC Website. EPA itself is prohibited from making such survey; California EPA carried out the last survey. Another survey could be taken. Mr. Scott Evans, representing the Environmental Data Improvement Group (EDIG) and chair of the ASETT subcommittee, said his group has concerns about the structure of the air standards and believes that they should not be proposed as a subsection of the existing NELAC Standard. He stated that the recently-formed ASETT is rethinking the Measurement of Source Emissions Standard and wants it to be a stand-alone document as placing the Measurement of Source Emissions Standards in the midst of general standards does not seem appropriate. Mr. Bivins remarked that the Field Activities Committee recognizes the special problems of in-situ sampling and analysis.

A representative from the State of Florida asked if the ASETT committee truly wants a separate stand-alone chapter of standards for air sampling and analysis. The ASETT chair said his group ideally is looking for a stand-alone document, whether it appears as a separate section of the Field Activities Chapter of the NELAC Standards or elsewhere. Dr. Simmons noted that some chapters of the NELAC Standards include appendices and this is another approach that could be taken. An audience member asked what was driving ASETT's wish to have a stand-alone document and in reply, Mr. Evans stated the air sampling community found the existing standards to be so geared towards water sampling and fixed laboratories that the best solution seemed to be to include air sampling as a stand-alone document. International Standards Organization (ISO) 17025 is being used as a starting point for the standard ASETT is preparing, however, much more discussion of this topic is needed. Mr. Bivins said NELAC allowed the Field Activities Committee to have a separate chapter (Chapter 7) for its standard however there are some references to that of the Quality Systems chapter. There was support by one participant for the development of a separate document that has everything included and does not require the user to cross-reference other chapters. He would also like to see this stand-alone document idea applied to water and waste sampling, too. Each type of sampling is a science in and of itself, requiring special knowledge and skills to produce defensible results and to satisfy the review of various regulatory agencies. Mr. Bivins expressed interest in learning more about how the ASETT subcommittee will develop such a stand-alone document.

To conserve time, an audience member asked that the Field Activities Committee continue with development of the remainder of the sampling standards, including the general sampling standard, and add the Measurement of Source Emissions Standards later. A committee member suggested approving the chapter on a section-by-section basis. Dr. Simmons proposed that Sections 7.0 and 7.1 be voted on during NELAC VI. This proposal will be revisited later today by the committee. Another

audience member asked that the committee table the controversial issues and try to come to a vote this week on general sections of Chapter 7. A participant noted that many industries contract with companies to do water and wastewater sampling exclusively. Many of these sampling firms have no laboratories of their own and pass the samples to a laboratory for analysis. In Virginia, there is usually no oversight of such sampling firms and their activities unless the state just happens to be present when sampling is underway. If a significant problem is noted by the state, the industry which hired the sampling firm receives a violation. In Florida, if the testing is inappropriate, the test and its report is rejected. It is believed that Florida law allows enforcement action to be taken against a sampling firm; however, this has not occurred. Someone else noted that since the sampling organization usually contracts with a laboratory, it is the sampling organization that needs oversight. Florida has a set of standard operating procedures (SOPs) that all water and waste, and soil sampling organizations, are expected to follow. These standards are now being rewritten. Proposed SOPs are now on the Florida Department of Environmental Protection Website.

Mr. Evans urged the committee to consider market forces and their effect in deciding to expand the scope of the standards. Market forces also weed out poorly-performing sampling firms. A participant asked if the text of Chapter 7 of the NELAC standard could be provided. Dr. Simmons commented about the copyright problems with the ISO since some direct quotes were made in the draft of Chapter 7. A participant representing the State of New York mentioned that their laws grant no authority over firms whose business is exclusively sampling. The law does deal with laboratories which take samples, including even small firms making pH measurements in the field. In that case they are considered a laboratory and are under the authority of the State of New York. Someone suggested that New York take a close look at the State Implementation Plan under the Clean Air Act. New York may find that it does have authority over such sampling firms. Another participant remarked that we should not emphasize enforcement activities, but rather concentrate on ensuring quality work in sampling.

A Florida spokesman recommended that the Field Activities Committee work on writing stand-alone standards for each medium (i.e., air, water, solid wastes). Thus all standards could be prepared in parallel and agreement could be reached more quickly. Dr. Simmons explained that the Measurement of Source Emissions Standard has sampling and analysis more tightly combined than do water standards which may have different sampling and analysis firms. Another member of the audience said her small company does a lot of underground sampling near leaking storage tanks and in the process collects many sorts of samples including those taken from water, soil, and soil/gas matrices. Thus, one company on one job may collect many sample types that do not fall into distinct media categories. Another participant cautioned the committee that the parallel standards approach would complicate the standards preparation process, and furthermore, may not be approved by NELAC. Dr. Simmons responded that the committee's intent is to develop a general sampling standard for field sampling and then add details about source sampling, and so on, within the standard's subsections. There are several other items, not necessarily present in all methods, that influence quality.

An industry representative thought the discussion was departing from the NELAC mission and that the

general goals of NELAC were being confused by attempting to create a redundant set of standards. NELAC's intent is to provide some assurance that quality is present, regardless of what is done.

General Sampling Standard Details

Section 7.1, General Field Sampling Standard

Dr. Simmons presented more detailed information about the general sampling standards and he noted the copyright problems which the committee hopes will be resolved very soon.

Section 7.1.1, Scope

For many this may be a major problem. Wording similar to ISO 17025 was chosen as a basis for a NELAC sampling standard since it already included considerable language on sampling. Several general comments were offered.

An industry representative asked how NELAC defined a "laboratory." Reference was made to the glossary of NELAC. "Laboratory:.... a body that calibrates and/or tests." Another person felt the standards should be uniform and follow data quality objectives. The present NELAC standard approach is a mistake. Another participant intoned that if NELAC is going to adopt ISO 17025, then definitions given by NELAC should be the same as those in the ISO literature. Resolving the issue of what constitutes a laboratory is important. We should not exclude any measurement made for compliance purposes from coverage by NELAC standards. The development process for the standards needs to focus on a staged approach. Everything cannot be included. The standards must be kept open for changes as time goes by.

Section 7.1.3, Personnel

A laboratory may subcontract for sampling. The laboratory must ensure competency of samplers by supervising them. Training of personnel should be documented and kept current.

An organization would have to be re-accredited each year, per other chapters of the NELAC Standard. Dr. Simmons noted that an organization is responsible for maintaining adequate training of new employees before they go to the field, whether or not the organization has a high turnover of personnel. NELAC does not plan to certify or accredit individuals.

Another audience member asked how a small, 7-person firm would be accredited. Dr. Simmons said such a firm which samples, analyzes, and engineers, all simultaneously, is not as yet covered by the NELAC Standard. The firm in question also collects drinking water samples. Dr. Simmons said it will come down to what type of accreditation the firm seeks.

Another person asked if the sampling standards would be as rigorous as those of the laboratory. Dr.

Simmons noted that the samplers must have adequate experience and training and provide a general statement of qualifications needed. Some sampling requires more experience and training than others.

Section 7.1.4, Accommodation and Environmental Conditions

The idea presented here is to avoid cross contamination or contamination in general. (Dust storms, etc).

Section 7.1.5, Sampling Methods

This section provides a base requirement to ensure the organization uses appropriate methods. The language "meet the regulatory needs of the client" is in addition to ISO language. The sampling methods are not limited to ISO or EPA methods. A participant asked how an assessor could verify that the methods could be assessed, the concept of "assessability." Dr. Simmons said non-standard methods must have documentation to show they have been validated. The laboratory must recognize when they are dealing with standard methods, using a non-standard method, or employing a standard method that has been modified.

Methods must be appropriate and must have been validated. The remark was made that the issue of assessability is key. One person thought that ISO 17025 is assessable and people all over the world are being assessed, based on ISO 17025. Also, notes are included in ISO17025 which could be used as assessor guidelines. Dr. Simmons said this could be done and assessability would also be considered in writing Chapter 7 of the NELAC standard.

Section 7.1.6, Equipment

Equipment that is rented equipment must meet specifications. If an analyzing device is not covered by a method, there is still a requirement for calibration.

Section 7.1.7, Sampling Procedures

The laboratory shall have a sampling plan and the people using the plan must be familiar with it. This section has a "note" attached to it. Mr. Evans pointed out that notes in ISO standards are not considered part of the standard and are there for guidance only. The NELAC standard should follow the same convention with its notes. A period of discussion ensued about where to place such notes in a standard. Some wanted them collected in an appendix, others believed the notes were important and instructive enough to place them in the standard near the text they modify. NELAC generally votes on a standard with the notes included, but recognizes that the notes are not part of the standard. Mr. Bivins will take this up with the NELAC Board of Directors (BoD) and the Program Policy & Structure Committee. The Program Policy and Structure Committee needs to be consulted if some of the notes end up as new definitions in the NELAC Glossary.

It is necessary that the plan of sampling must be described. For example, is a random or systematic plan to be used?

Section 7.1.8. Test Reports

An appendix is proposed, which is an ISO appendix.

General Discussion

Dr. Simmons ended his presentation and a general discussion of the proposed sampling standard followed. A participant asked what would an accreditation authority use to approve a firm's ability to do air sampling? He expressed the opinion that what had been presented thus far seemed to be a guidance and not a standard. He was not seeing any requirements but instead, it seemed to be what would be put into a good quality assurance project plan (QAPP). The question of whether the general sampling standards should be linked to specific sampling procedures was raised. It was also felt that what Dr. Simmons had presented thus far did not go to the level of specificity demanded by various sampling methods. A period of further discussion followed concerning the level of detail needed and how well states may accept such a standard with minimum criteria. Other points included using performance-based standards, avoiding too much prescriptiveness, don't add anything more, focus on what the assessor is to do at this point. One state representative thought the standard as it now stands is clearly assessable. Another state representative asked if a copy of the ISO 17025 standard was available; it is unavailable at present due to copyright problems. When the copyright problems are resolved, the draft sampling standard will be posted on the NELAC Website.

Another person added that to only restate ISO standards isn't enough but that the standard needs more specificity. Another noted that training in and application of the standard should be consistent across states.

Presenting for Vote - Chapter 7

Dr. Simmons asked the committee how it felt about putting any sections of the sampling standard to a vote during the voting session. The committee members were concerned that the participants in this meeting cannot have a copy of the standards due to copyright concerns. Dr. Simmons proposed that the notes sections be pulled from the standard and not voted on until NELAC decides on how to treat such notes. Several committee members wanted to go forward with the vote but to first talk with members of the BoD and ELAB to get feedback on how to proceed. Mr. Bivins will ask board members if the committee can proceed with a vote with Section 7.1 provided that the notes are pulled and that references to ISO are shown on overhead slides. A straw vote of the audience was taken on whether such a vote should occur. Very few thought this should be done. It was suggested that a vote be called for, but that it be made very clear to voters that the standard is by no means perfect, and furthermore, to clearly state what changes will be made in the standard in the coming months. The

scope of the standard may need to be tightened, the term 'laboratory' needs to be better defined, and all sections of the chapter need to be checked against other NELAC chapters for consistency.

REPORT FROM THE MEASUREMENT OF SOURCE EMISSIONS STANDARD SUBCOMMITTEE MEETING

Mr. Bivins reviewed the content and outcome of a recent meeting of the MSE subcommittee meeting in Chapel Hill, NC, where comments from members of the EDIG were heard and considered. A new subcommittee to ELAB, ASETT, was formed with Mr. Evans as chair. It was decided at that meeting that Section 7.3 of the proposed Chapter 7 would not be voted on at NELAC VI, but would be revised by the ASETT subcommittee and shared with the Field Activities Committee as it is developed. Mr. Bivins then asked Mr. Evans to present information on ASETT subcommittee plans.

After thanking the Field Activities Committee and Ms. Jeanne Hankins for helping the ASETT subcommittee, Mr. Evans handed out a summary of the purpose, work products, and timetable of ASETT. This summary is presented as Attachment C.

Mr. Evans began by making several statements. A key element of quality is to train the observers and assessors well and avoid the use of checklists in lieu of experience. Proficiency testing (PT) is a complicated and knotty issue for stack samplers. The need for shared responsibility for air emissions standards should consider the stack testing company, the state, and the source being tested.

Dr. Simmons asked Mr. Evans about the concept and roles of observers and assessors in source sampling. Mr. Evans stated the same person could do both jobs. The assessor is more highly trained and is very familiar with the standards. Mr. Peter Law noted there are many inconsistencies among states in terms of how often they observe stack sampling tests.

Mr. Evans spoke about the use of National Institute of Standards and Technology (NIST)-traceable standards and how some states supply audit samples on-site. A state representative noted how difficult it is to generate audit samples for stack sampling. Mr. Bivins asked for suggestions. The Emissions Measurement Center at EPA/Research Triangle Park (RTP) does supply some PT samples and they are often used. It would be difficult to test the proficiency of a team involved in the sampling process itself. It may be a complex undertaking and may involve wind tunnel spiking.

In response to the question of why a separate standard is being sought, Mr. Evans stated that the NELAC Standards in general are not being debated. The existing "standards" for stack sampling are voluminous already, so why not add on a stand-alone standard to the already existing standards for stack sampling, thereby simplifying matters?

The question of whether ISO 17025 is really applicable to stack sampling was raised since it was written with the conventional fixed-base laboratory in mind.

A committee member asked about the need for a stand-alone document for source sampling. Can it not be incorporated into Chapter 7? Mr. Evans said yes, that's possible, but his group is concerned about the number of linkages to other standards that may not be very applicable to stack testing. Another committee member commented on the difficulties involved in having to refer to several documents. His company has already incurred expenses in bringing several standards under one cover.

A participant asked if the performance standard envisioned by the ASETT group will be assessable. The answer was yes, since it will be based on the entirety of ISO 17025 and since an American Association for Laboratory Accreditation (A2LA) assessor is a member of his group and will be attentive to assessability of the document. Mr. Evans believes ISO 17025 could be used, as it is, as a standard for stack testing, but others expressed some doubt about this. Mr. Evans said inapplicable segments of ISO 17025 would be removed and any points needed to cover stack sampling would be added. In Mr. Evans' opinion, performance testing is the preferred method, and an effort should be made to avoid prescriptive reviews.

There was some mention of modifying existing stack sampling reporting requirements to match the ISO 17025 documents and in many cases, stack samplers present reports to the customer while still in the field.

Mobile Laboratories

The ASETT committee (30 people) most recently met in Salt Lake City, UT at the Air & Waste Management Association (AWMA) meeting and discussed mobile laboratories and assessor and observer concerns, among other matters.

ASETT Schedule

Mr. Evans then reviewed the schedule ASETT will follow to develop and debate the standards. Minutes of the meetings will be shared with the Field Activities Committee and will be posted on the EDIG Website (www.betterdata.org), the NELAC Website, and the EPA EMC Website.

Mr. Evans then went through the management and technical sections of the ISO 17025 standard by displaying the wording on overhead slides. He asked for discussions about their applicability to stack testing. Those interested in purchasing the ISO standard should be sure to purchase the final edition and not the draft.

ISO Section 5.2 Personnel.

The real criteria should be whether or not the personnel can do the job and not their years of experience and level of education. One participant suggested that a key component of the overall process should be cross-training of personnel among the states. Have representatives from several

states observe stack sampling and cross-compare notes. Training must be rigorous, not laissez-faire. Again, assessor training is vital to the process. A training course that gets right to the point is ideal and the trainers themselves should be "certified" by NELAC. The typical 5-day training course should focus on turning an observer into a knowledgeable assessor.

Quality Assurance (QA) Plan

The QA plan of the sampling company is assessed as well as personnel but paperwork checks are only part of the story. The real key is to see if people are doing the work properly. A responsible auditor or assessor asks employees about their training and ask questions about their responsibilities. The assessor looks at the system output, uses some judgment, and compares the QA plan to what is really being done. The process must work the same from state to state, but should not have to have the exact same questions answered to achieve reciprocity among states. The key to consistency is assessor training. Mr. Evans next showed a series of photos of actual stack sampling jobs to illustrate the difficulties of stack sampling.

Additional Comments and Suggestions

Additional comments and suggestions that were made included using notes in standard and placing them right next to the text to which it refers. Referencing the note is much easier using this arrangement.

In Florida, test methods are often adopted as State regulations.

The assessor should expect the stack sampling firm to be able to do what they have been trained to do. This somewhat obviates the need for fields of testing. Rather than dwelling on analytes and methods should instead look at results and see that they meet the data quality objectives, whatever method is used. The PBMS (performance-based measurement system) is applicable in these cases. In the discussion that followed, several points were made:

- Every time a test is observed it constitutes an assessment. This is better than a once or twice a year announced visit to see the field sampling system working at its best. The idea is to assess the quality system, not the methods.
- Grouping of methods is inappropriate -- instead, use a 3-step process: evaluating personnel training and knowledge, selection of appropriate methods, and equipment evaluation.
- What's really important in evaluating a firm's process is to be sure the company has an infrastructure in place to do the job right.
- Evaluation of quality systems would come later, after the technical material is in place.

ISO Section 5.2.4

An industry representative was concerned about the language of ISO Section 5.2.4 and asked if this demanded that the source firm must have personnel records on-site at all times, including those of contracted personnel. Various ways of handling this were suggested, including keeping the records where the personnel files are located or maintaining the records on a CD-ROM or equivalent, as they're capable of storing a large amount of documentation. These aspects of record keeping will need to be discussed further.

Remaining Topics

The following sections of the ISO 17025 standard were reviewed briefly with little discussion:

- Section 5.3, Accommodations and Environmental Conditions
- Section 5.4, Test and Calibration Methods and Method Validation
- Section, 5.4.4, Non-Standard Methods
- Section 5.4.5, Validation of Methods
- Section 5.4.7, Control of Data
- Section 5.5, Equipment
- Section 5.6, Measurement traceability
- Section 5.7, Sampling
- Section 5.8, Handling of Test and Calibration Items
- Section 5.9, Assuring the quality of test and calibration results.
- Section 5.10, Reporting

Mr. Evans ended his presentation at 4:45 p.m. Mr. Bivins thanked Mr. Evans for the report and asked that ASETT provide new information and revisions to the Field Activities committee as they occur and to inform them of upcoming teleconferences.

CONCLUSION

Mr. Bivins summarized the action items which are included in Attachment A. The meeting was adjourned at 5:00 p.m.

**Action Items
Field Activities Committee Meeting
June 27, 2000**

Item No.	Action	Date to be Completed
1.	Define "laboratory" (interact with other committees)	ongoing
2.	Consider use of the term 'International Standards' versus NELAC standards and how this term relates to language to be written for the Chapter 7 sampling standard (committee)	next teleconference
3.	Recommend to appropriate NELAC committees that 'notes' that accompany standards be placed within the text (and not at the end or elsewhere). Seek advice of others. (committee)	this meeting
4.	Schedule further committee discussion of advisability of preparing medium-specific standards (Bivins)	during future teleconferences
5.	Ask ASETT Committee to complete work on its proposed revisions to the MSE standard by September 1 and convey draft results to the MSE subcommittee (Bivins)	today
6.	Ask Dr. Pearson about structure of the standard and limitations on the language that may be employed.	this meeting

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FIELD ACTIVITIES COMMITTEE MEETING
JUNE 27, 2000**

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Attachment B (Continued)

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**Purpose, Work Products, and Timetable
of the Air Source Emission Task Team (ASETT)**

Statement of Purpose

1. To develop voluntary, objective performance criteria for establishing an acceptable quality standard for air emission testing and sampling.
2. To establish consistency in such standards among states.
3. To develop objective procedures to determine if the processes are in place to routinely meet the standard.
4. To accomplish the above in a manner that minimizes the regulatory burden and economic burden on all stakeholders.

Essential Elements

1. Test observation by qualified observers
2. Document standardization (protocols, reports, QAPP, SSTP)
3. Assessor/tester training
4. Quality System (KISS, Corrective Action)
5. Proficiency testing
6. Stakeholder requirements
7. Accreditation/assessment process (application, mechanism for deficiencies)

Guiding Directives

1. Self-contained document
2. ISO 17025
3. Minimize regulatory and economic burden
4. Develop performance standard first, then accreditation process

Timetable/Milestones

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|---------|---|
| 6/20/00 | Salt Lake City ASETT meeting in conjunction with the Air and Waste Management Association (AWMA) Conference |
| 6/27/00 | ASETT meeting after Field Activities Committee meeting at the NELAC Conference |
| 7/06/00 | Teleconference - draft standard outline completed |
| 7/17/00 | Begin teleconferences every other Monday |

Attachment C (Continued)

8/31/00	Draft completed (~ 80%)
9/15/00	Post draft for NELAC review
11/01/00	NELAC Interim meeting - presentation of draft